SCANNED,# 10

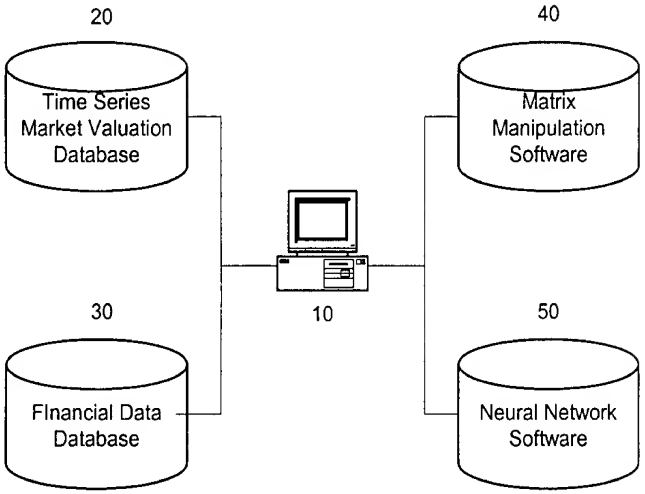

FIG. 1

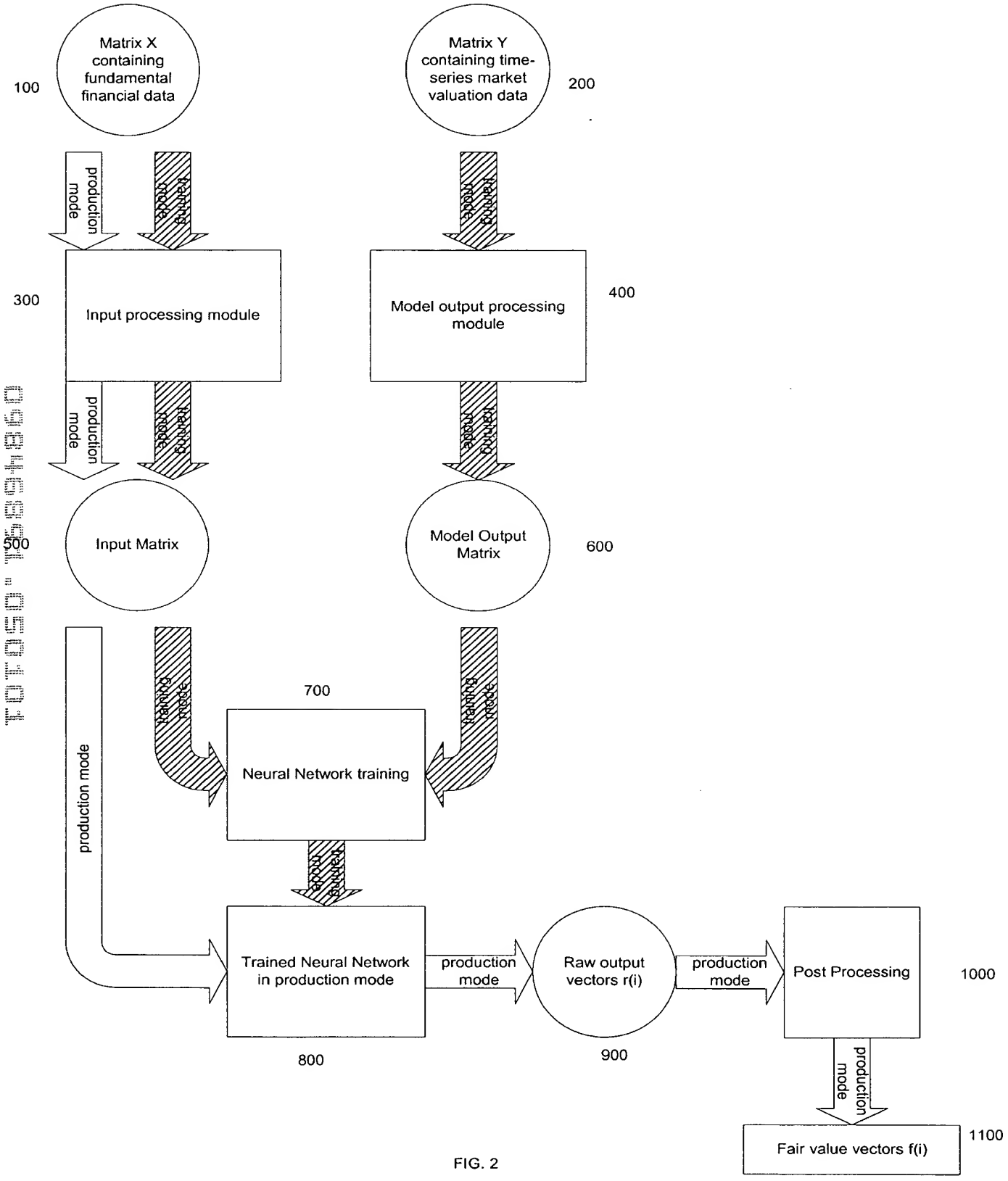
Matrix X containing fundamental financial data
100
Matrix Y containing time-series market valuation data
200
production mode
training mode
Input processing module
300
Model output processing module
400
Input Matrix
500
Model Output Matrix
600
Neural Network training
700
Trained Neural Network in production mode
800
Raw output vectors r(i)
900
Post Processing
1000
Fair value vectors f(i)
1100

FIG. 2

Companies C_1, C_2 ... C_T

Financial Data Categories D_1, D_2 ... D_{30}

	C_1	C_2	C_3	...	C_T
D_1	$X_{1,1}$	$X_{1,2}$	$X_{1,3}$	...	$X_{1,T}$
D_2	$X_{2,1}$	$X_{2,2}$	$X_{2,3}$	...	$X_{2,T}$
D_3	$X_{3,1}$	$X_{3,2}$	$X_{3,3}$	...	$X_{3,T}$
.	.	.	.		.
.	.	.	.		.
.	.	.	.		.
.					
.					
.					
D_{30}	$X_{30,1}$	.	.		$X_{30,T}$

X Matrix 100 (valuation data)

Companies C_1, C_2 ... C_T

Time Indices t to t-2500

	C_1	C_2	C_3	...	C_T
t	$Y_{t,1}$	$Y_{t,2}$	$Y_{t,3}$	...	$Y_{t,T}$
t-1	$Y_{t-1,1}$	$Y_{t-1,2}$	$Y_{t-1,3}$	...	$Y_{t-1,T}$
t-2	$Y_{t-2,1}$	$Y_{t-2,2}$	$Y_{t-2,3}$	...	$Y_{t-2,T}$
.	.	.	.		
.	.	.	.		
.	.	.	.		
.					
.					
t-2500	.	.	.		

200

Y Matrix 200 (time-series data)

FIG. 3

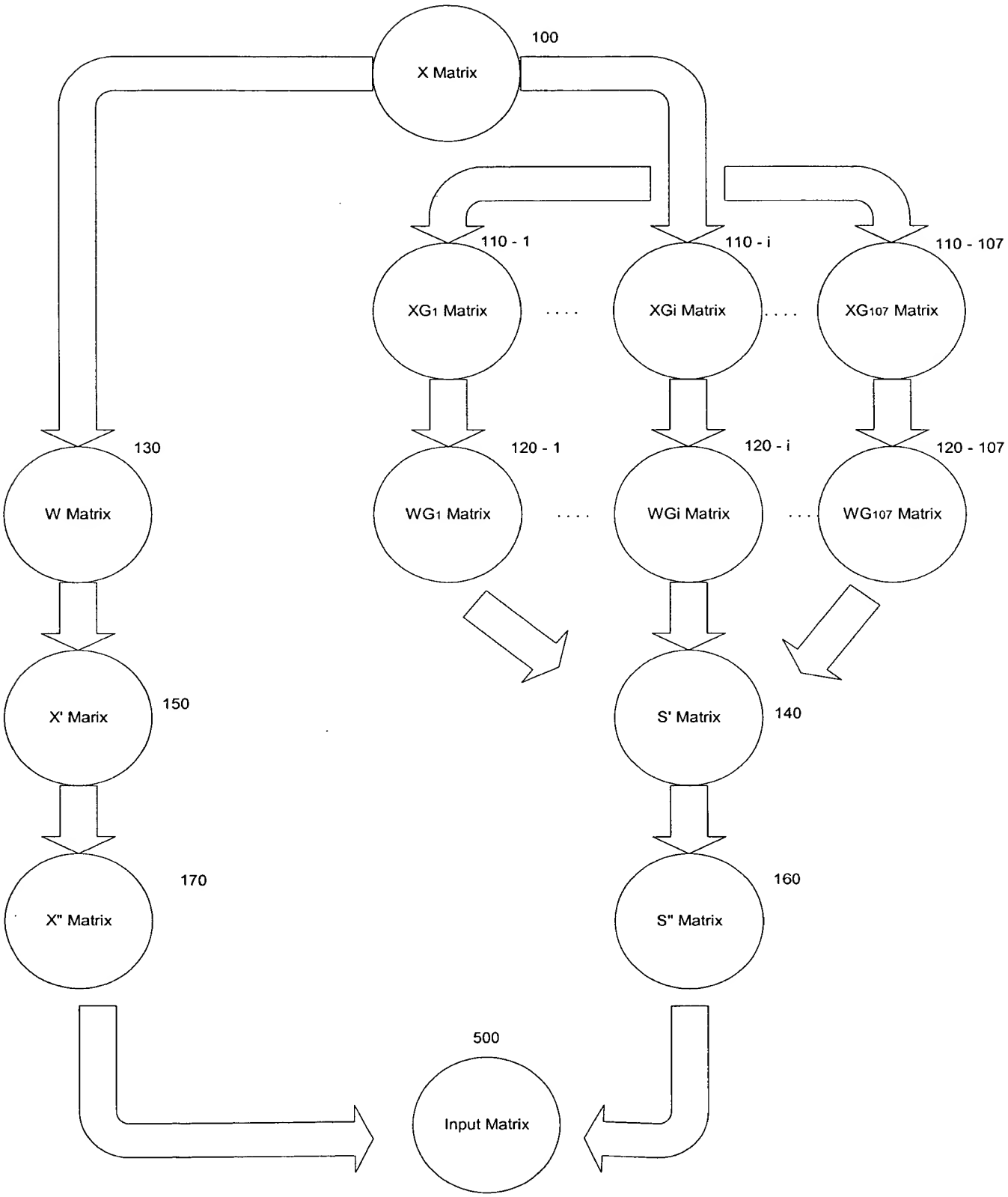
X Matrix
100
110 - 1
110 - i
110 - 107
XG1 Matrix
XGi Matrix
XG107 Matrix
130
120 - 1
120 - i
120 - 107
W Matrix
WG1 Matrix
WGi Matrix
WG107 Matrix
X' Marix
150
S' Matrix
140
X" Matrix
170
S" Matrix
160
500
Input Matrix

FIG. 4

1	-2	1	0	0	...	0
-2	5	-4	1	0	...	0
1	-4	6	-4	1	...	0
0	1	-4	6	-4	...	0
0	0	1	-4	6	...	0
.	.	.	.	.		.
.		.	.	.	.	.
.		.	.	.	.	.
0	...	6	-4	1	0	0
0	...	-4	6	-4	1	0
0	...	1	-4	6	-4	1
0	...	0	1	-4	5	-2
0	...	0	0	1	-2	1

A Matrix 610

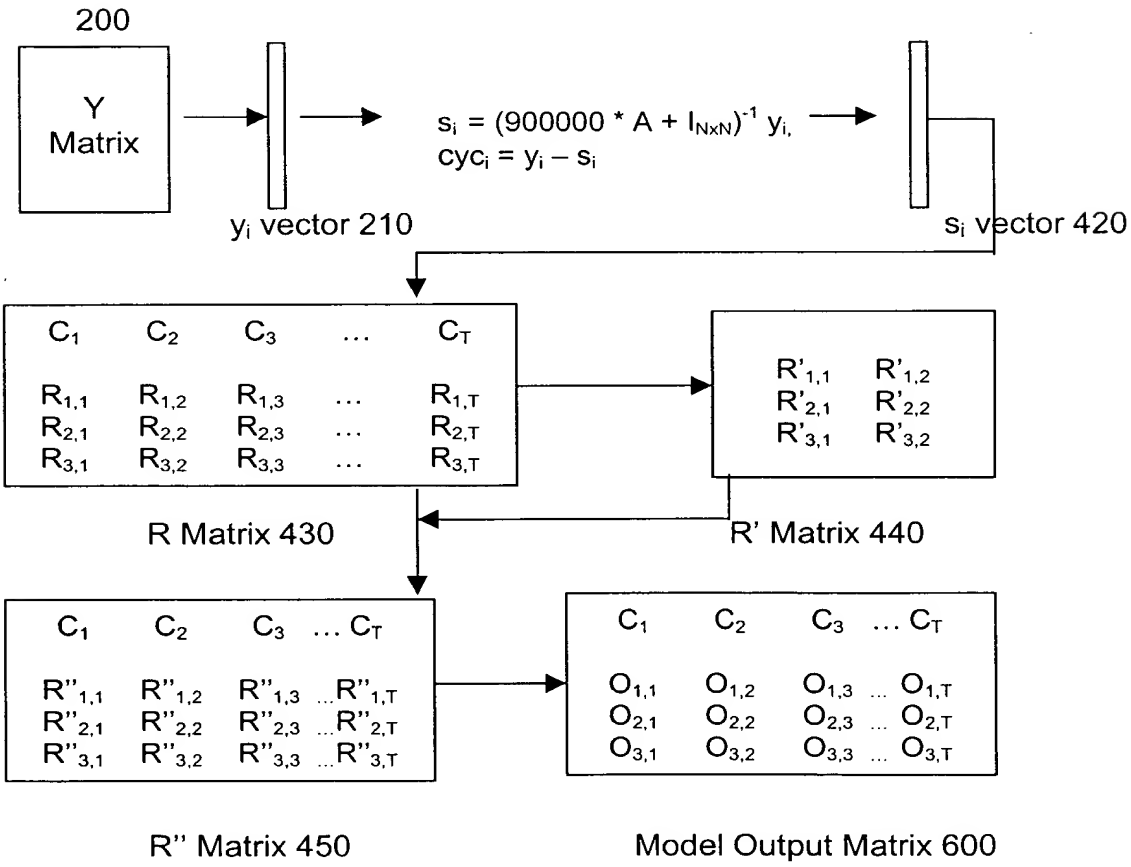

FIG. 5

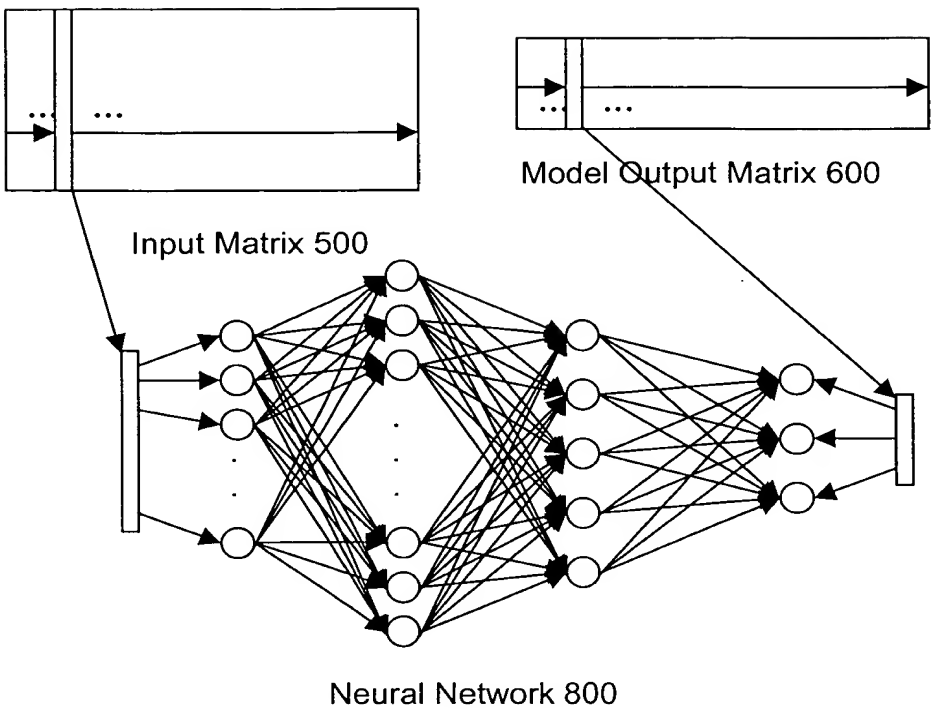
Model Output Matrix 600
Input Matrix 500
Neural Network 800

FIG. 6